

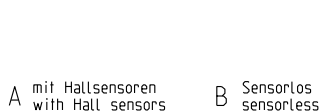
ECX SPEED 13 M Ø13 mm, brushless, BLDC motor

Sterilizable, ceramic bearings

Key Data: 25/27 W, 3.6 mNm, 120 000 rpm

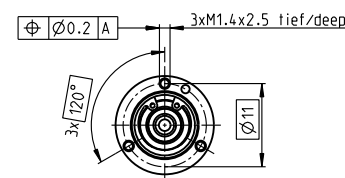
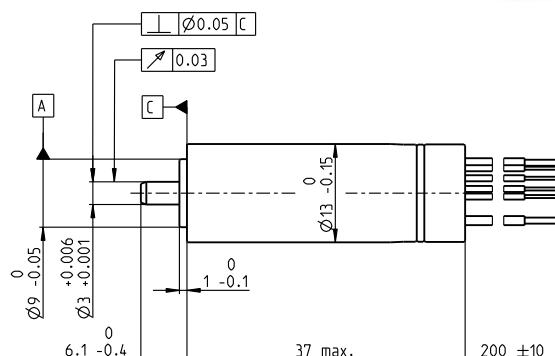


ECX SPEED



Lage des Kabelabganges
zum Befestigungsbohrbild $\pm 25^\circ$

alignment of cables relative
to mounting holes $\pm 25^\circ$



M 1:1

Motor Data

1. Nominal voltage	V	18	24	36	48
2. No load speed	rpm	77600	77600	77600	74500
3. No load current	mA	186	140	93.3	65.7
4. Nominal speed	rpm	73900	74100	74200	71000
5. Nominal torque	mNm	3.02	2.99	2.8	3.03
6. Nominal current (max. continuous current)	A	1.55	1.15	0.724	0.557
7. Stall torque	mNm	68.8	72.3	68.1	69.2
8. Stall current	A	31.3	24.7	15.5	11.3
9. Max. efficiency	%	85	86	85	86
10. Terminal resistance	Ω	0.576	0.973	2.33	4.24
11. Terminal inductance	mH	0.0135	0.024	0.054	0.104
12. Torque constant	mNm/A	2.2	2.93	4.4	6.11
13. Speed constant	rpm/V	4340	3260	2170	1560
14. Speed/torque gradient	rpm/mNm	1140	1080	1150	1080
15. Mechanical time constant	ms	1.55	1.47	1.56	1.48
16. Rotor inertia	gcm ²	0.13	0.13	0.13	0.13

Thermal data

17. Thermal resistance housing-ambient	K/W	29.5
18. Thermal resistance winding-housing	K/W	2.5
19. Thermal time constant winding	s	1.69
20. Thermal time constant motor	s	475
21. Ambient temperature	°C	-40...+135
22. Max. winding temperature	°C	155

Mechanical data ball bearings

23. Max. speed	rpm	120 000
24. Axial play	mm	0...0.28
Preload	N	1.5
Direction of force		pull
25. Radial play		preloaded
26. Max. axial load (dynamic)	N	1.5
27. Max. force for press fits (static)	N	50
(static, shaft supported)	N	1500
28. Max. radial load [mm from flange]	N	6 [5]

Other specifications

29. Number of pole pairs	1
30. Number of phases	3
31. Weight of motor	g 32
32. Typical noise level [rpm]	dBA 46 [50 000]

Connection A and B, motor (Cable AWG A: 26, B: 22)

red	Motor winding 1
black	Motor winding 2
white	Motor winding 3

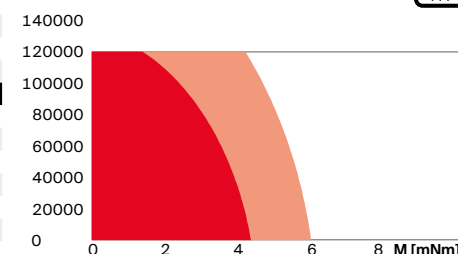
Connection A, sensors (Cable AWG 28)

orange	V _{CC} 5 ±0.5 V
blue	GND
yellow	Hall sensor 1
brown	Hall sensor 2
grey	Hall sensor 3

Output signals: CMOS compatible push-pull stage. No pull-up resistor required. Hall signals are generated by an EASY INT sensor. In combination with the ENX EASY INT, the orange (V_{CC}) and blue (GND) connections are not used.

Operating Range

n [rpm] winding 36 V



Sterilization information

Sterilization cycles
Sensorless: typical 2000
Hall sensors: typical 1000

Sterilization with steam

Temperature +134°C ±4°C
Compression pressure up to 2.3 bar
Rel. humidity 100%
Cycle length 18 min.

- Continuous operation
- Continuous operation with reduced thermal resistance R_{th2} 50%
- Short term operation

Modular System

Details on catalog page 40

Gear	Stages [opt.]	Sensor	Motor Control
363_GPX 13 SPEED	1-3	for motor type A: 481_ENX 13 EASY INT	532_ESCON Module 24/2 533_ESCON 36/3 EC
		for motor type B: 481_ENX 13 EASY INT Abs.	533_ESCON Module 50/4 EC-S 535_ESCON 50/5 537_DEC Module 24/2 537_DEC Module 50/5 541_EPOS4 Micro 24/5 542_EPOS4 Module 50/5 542_EPOS4 Module 24/1.5 543_EPOS4 Compact 24/5 3-axes 544_EPOS4 Compact 24/1.5 545_EPOS4 Compact 50/5 547_EPOS4 50/5 548_EPOS4 Disk 60/8

Configuration

Flange front: thread holes/center thread
Flange back: metal ring/external thread
Shaft front: length/diameter
Electric connection: cable length/pin connection
Appropriate connectors and connecting cables are available for the configuration of the pin connection together with the external thread: see catalog, Accessories section.

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